

**A
Radiosonde
What is that
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You have recovered a radiosonde that was sent into the skies earlier by the United States Weather Bureau. You have been asked to return it to the Post Office. You may be curious to know what the instrument is, how it is used and why it is important that the Weather Bureau gets it back. This explanation is included with the package to answer some of your questions and to express the Weather Bureau's thanks for your efforts in our behalf.

The radiosonde was carried aloft from the Weather Bureau station whose name appears on the mailing tag, by a large balloon filled with helium or hydrogen gas. When it reached approximately 90,000 feet, the balloon burst. A small parachute opened and the radiosonde descended gently enough to keep it intact when it reached the ground and to minimize any damage. Radiosondes are found an average of approximately 200 miles from the point at which they are released.

What Does a Radiosonde Do? The box contains specially-designed instruments that measure temperature, atmospheric pressure and humidity at various levels as it rises. It also has a radio transmitter by which the information is relayed to ground stations. Wind directions and velocities also are obtained by tracking the flight of the radiosonde with direction-finding ground radio equipment. It becomes obvious that the key to this program is sounding by radio and that is how radiosonde got its name.

Why Is the Information Needed? For one thing the weather at the surface is determined in great part by conditions throughout the upper atmosphere. Knowledge of what is taking place aloft is vital in forecasting the weather. A second reason for the importance of upper air observations is the value to pilots who fly at all altitudes and must know what is happening and will happen along their routes.

How Many Radiosondes are Sent Up? The Weather Bureau operates just over 150 radiosonde programs throughout the world. Of these, 85 are in the United States. Depending on the station, radiosondes are launched from two to four times a day. Approximately 328 scheduled launchings are made daily. Six Coast Guard ocean vessels, four in the Atlantic and two in the Pacific, also take part, with Weather Bureau meteorological personnel responsible for radiosonde observations. Upper air information also is obtained from the Antarctic, the Pacific, Canada, South America, the Caribbean and other cooperative stations.

Why Should the Radiosondes Be Returned? —It is just a matter of money. A new radiosonde costs the government about \$13. The Weather Bureau has developed a facility at Joliet, Illinois, at which recovered instruments can be reconditioned for only \$6 each. That means a saving to the government (and to you, the taxpayer) of more than one-half the cost of a new instrument.

The Joliet center has been in operation 22 years and during that time 375,000 radiosondes have been reconditioned, some as many as seven times. The amount saved averages over \$150,000 a year.

It is not possible to recover all the radiosondes. Many fall into the sea and on remote or uninhabited sections of the globe. But the Weather Bureau does get 25 percent back through the cooperation of responsible, conscientious individuals who appreciate what the Weather Bureau is attempting to do. □

